

REMARKS

The application has been amended to place the application in condition for allowance at the time of the next Official Action.

Claims 1-13, 15 and 16 are pending in the application.

Claims 1-5, 7-12, 15 and 16 were rejected under 35 USC 103(a) as being unpatentable over WO 02/079644 in view of WO 03/002891. That rejection is respectfully traversed.

Claim 1 is amended to clarify the recited bogie plate and its relationship to the planet carrier. Support for the amendment can be found at least on page 4, line 21 to page 5, line 9.

As recognized in the Official Action, WO '644 does not disclose taper roller bearing with a bogie plate. WO '891 is offered for this feature, with the Official Action concluding that the only difference between the present invention and WO '644 is that the present invention uses TRBs instead of the SRBs which are used in WO '891.

However, such assertion is unfounded.

For a person of ordinary skill in the art, it is clear that a configuration with a bogie plate as represented, for example, in figure 4 of the application having planet shafts 44 for supporting planet gears 47 of a planetary gear system is completely different from a configuration in accordance with WO '891.

With reference to the last paragraph on page 4 of the present application, it is stated that the bogie plate 43 itself is supported by three studs 42 which are connected to the planet carrier 41 and which pass in between the planet gears 47.

One of ordinary skill in the art readily understands that the interaction between the ring wheel, planet gears and sun wheel has a strong influence on the bogie plate, which bogie plate itself is interacting with the planet carrier by means of the afore-mentioned studs.

This means the different parts in the gear system are often subjected to high deformations under the influence of the different loads. These deformations are of a complete different nature than in the case of the WO '891.

Such differences are taken into account during the design of the device and require a well elaborated dimensioning of the different parts of the gear system during design and certainly in cases, as with the present patent application, in which the gear system is applied in wind turbines which are subjected to considerable high loads.

As a consequence, it is more than a substitution of SRBs with TRBs in order to result in the presently claimed invention. That is, an inventive step is required.

Moreover, one of ordinary skill in the art would not have considered the proposed substitution because the proposed

substitution is contrary to the accepted teachings at the time the present invention was made.

MPEP 2141.02 requires that the claimed invention as a whole must be considered. That is, focusing only on the bearings is improper. Instead the focus must be on the invention as a whole including the insight used by the inventors to arrive at the claimed invention. "Because that insight was contrary to the understandings and expectations of the art, the structure effectuating it would not have been obvious to those skilled in the art." 713 F.2d at 785, 218 USPQ at 700 (citations omitted).).

One of ordinary skill in the art did not consider TRBs in combination with a bogie plate because one loses degrees of freedom because the TRBs are fixed to the planet gear and cannot freely move. That is, the combination bogie plate/TRBs has a lower number of degrees of freedom (DOF).

In view of this, one of ordinary skill in the art would not have substituted TRBs for the SRBs of WO '644 (see page 2, lines 14-21 of WO '644 wherein SRBs are required to ensure uniform distribution of stresses).

Furthermore, it was surprisingly found that not having the added degrees of freedom of the planets on SRBs could at least partly be compensated by using the self-adjusting characteristics of the TRBs.

Hence, the present inventors surprisingly found that, although giving rise to less degrees of freedom, the combination of a bogie plate with TRBs still allows a good load distribution. In other words, the 1 rotational DOF left in combination with self-adjusting characteristics of the TRBs is enough for a good load distribution.

Thus, although one of ordinary skill in the art knows that there are differences in degree of freedom between spherical roller bearings and tapered roller bearings, nevertheless, and because of this difference, one of ordinary skill in the art would not have substituted TRBs for the SRBs.

That is, at the time of filing, it was commonly believed that a sufficiently high degree of freedom was necessary in order to have a proper functioning of the gear unit and for that reason spherical roller bearings were always used.

The recited bogie plate combined with TRBs was never proposed before and it was believed not to be workable at the time of filing based on a lack of degree of freedom.

In view of this, it would not have been obvious to one of ordinary skill in the art to combine the references in the manner suggested.

Accordingly, the present claims are believed to be patentable over WO '644 in view of WO '891.

Claims 1-13, 15 and 16 were rejected under 35 USC 103(a) as being unpatentable over WO 02/14690 in view of WO 03/002891. That rejection is respectfully traversed.

The Official Action recognizes that WO '690 does not disclose taper roller bearing. WO '891 is offered for this feature, with the Official Action concluding that the only difference between the present invention and WO '690 is that the present invention uses TRBs instead of the SRBs which are used in WO '891.

However, for the reasons set forth above, the proposed combination of references is improper not only because the proposed combination is contrary to the accepted teachings at the time the present invention was made, but also would not have been considered based on the difference in structure of the two references.

In view of this, it would not have been obvious to one of ordinary skill in the art to combine the references in the manner suggested.

Accordingly, the present claims are believed to be patentable over WO '690 in view of WO '891.

Claims 1-13, 15 and 16 were rejected under 35 USC 103(a) as being unpatentable over WO 03/014566 in view of WO 03/002891. That rejection is respectfully traversed.

The Official Action recognizes that WO '566 does not disclose taper roller bearing. WO '891 is offered for this

feature, with the Official Action concluding that the only difference between the present invention and WO '566 is that the present invention uses TRBs instead of the SRBs which are used in WO '891.

However, for the reasons set forth above, the proposed combination of references is improper not only because the proposed combination is contrary to the accepted teachings at the time the present invention was made, but also would not have been considered based on the difference in structure of the two references.

In view of this, it would not have been obvious to one of ordinary skill in the art to combine the references in the manner suggested.

Accordingly, the present claims are believed to be patentable over WO '566 in view of WO '891.

Claim 6 was rejected under 35 USC 103(a) as being unpatentable over WO 02/079644 in view of WO '891 and further in view of WO '690 and WO '566. That rejection is respectfully traversed.

Claim 6 depends from claim 1 and further defines the invention and is believed to define over the proposed combination of references at least for depending from an allowable independent claim.

Claim 13 was rejected under 35 USC 103(a) as being unpatentable over WO '644 in view in view of WO '891 and further

in view of WO '690 and WO '566. That rejection is respectfully traversed.

Claim 13 depends from claim 1 and is believed patentable over the proposed combination of references at least for depending from an allowable independent claim.

In view of the present amendment and the foregoing Remarks, the present application has been placed in condition for allowance. Reconsideration and allowance are respectfully requested.

The Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 25-0120 for any additional fees required under 37 C.F.R. § 1.16 or under 37 C.F.R. § 1.17.

Respectfully submitted,

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